

CLAIMS

1. Container closure (1, 1') for flexible storage containers, for example, bottles or tubes, that contain products that are liquid to pasty, wherein the container closure (1, 1') automatically opens like a valve to discharge the product when the storage container is squeezed and is then automatically closed again by the restoring force of the storage container, characterized by the fact that the container closure (1, 1') consists of a housing (5, 5') with a centrally arranged, axially displaceable elastic annular disk (2, 31) and an axially displaceable sealing plug (3, 30) arranged centrally below the annular disk, such that the downward axial movement of the annular disk (2, 31) is limited by several stop ridges (6, 32), and the upward axial movement of the sealing plug (3, 30) is limited by at least one stop ridge (6, 33).

2. Container closure (1) in accordance with Claim 1, characterized by the fact that the stop ridges (6) are arranged

between the annular disk (2) and the annular shoulder (9) of the sealing plug (3).

3. Container closure (1') in accordance with Claim 1, characterized by the fact that the stop ridge (33) is guided centrally from above onto the sealing plug (30) through the annular disk (31).

4. Container closure (1, 1') in accordance with Claim 1, Claim 2, or Claim 3, characterized by the fact that for possible ventilation of the storage container (20, 20'), the sealing plug (3, 30) is supported on a spring element (4, 18, 19, 25), and the sealing plug (3, 30) is pressed from below against the stop ridges (6, 33) and against the annular disk (2, 31) by this spring element (4, 18, 19, 25).

5. Container closure (1, 1') in accordance with Claim 4, characterized by the fact that the spring element (4) is a helical spring.

6. Container closure (1, 1') in accordance with Claim 4, characterized by the fact that the spring element is formed from radially arranged flat leaf springs (18) or from radially arranged leaf springs (19) that are bent to form a U-shape.

7. Container closure (1, 1') in accordance with one or more of Claims 1 to 6, characterized by the fact that the annular disk (2, 31) and the sealing plug (3, 30) are arranged in such a way that, in interaction with the stop ridges (6, 32, 33), the following positions are possible:

-- Closed position with the storage container unpressurized; the annular disk (2, 31) rests against and seals the sealing plug (3, 30) and the stop ridges (6, 32), and the sealing plug (3, 30) is pressed against the stop ridges (6, 33) from below by the spring element;

--Dispensing position with excess pressure in the storage container; the annular disk (2, 31) is lifted from the sealing plug (3, 30) and the stop ridges (6, 32), and the sealing plug (3, 30) continues to be pressed against the stop ridges (6, 33) from below; the material is discharged through the delivery gap (7) between the annular disk (2, 31) and the sealing plug (3, 30) that has formed towards the top; and

-- Ventilation position with negative pressure in the storage container; the annular disk (2, 31) is again resting on the stop ridges (6, 32), the sealing plug (3, 30) is displaced downward against the spring tension of the spring element (4, 18, 19, 25), and the storage container is ventilated through the ventilation gap (8) between the annular disk (2, 31) and the sealing plug (3, 30) that has formed towards the bottom.

8. Container closure (1, 1') in accordance with one or more of Claims 1 to 7, characterized by the fact that the elasticity of the annular disk (2, 31) and the spring tension of the spring element (4, 18, 19, 25) are adapted to the viscosity of the product that is to be delivered and to the elasticity or the restoring force of the storage container.